

REMARKS

Claims 1-9 were examined and reported in the Office Action. Claims 1, 5 and 9 are rejected. Claims 2 and 6 are canceled. Claims 1, 3, 5, 7 and 9 are amended. Claims 1, 3-5 and 7-9 remain.

Applicants request reconsideration of the application in view of the following remarks.

I. In the Drawings

It is asserted in the Office Action that Figs. 1A, 1B, 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Applicant has amended the drawings and submits replacement sheets showing such designations. Approval is respectfully requested.

II. 35 U.S.C. §103(a)

A. It is asserted in the Office Action that claims 1 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of U.S. Patent No. 6,700,926 issued to Heikkila et al ("Heikkila"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant's amended claim 1 contains the following limitations "[a]n apparatus for detecting signals of space-time coding based on transmission diversity ... wherein each of said channel estimator includes: a slot channel estimator for filtering the pilot symbol to estimate the channel gain, and obtaining the weighted average of the channel estimates of several slots in order to produce the channel estimate of the slot; a linear interpolation circuit for subjecting the channel estimate from the slot channel estimator to linear interpolation to produce the channel estimate of each transmission symbol; and a linear filtering circuit for obtaining the average of the channel estimates of the symbols extracted by the linear interpolation circuit for a given interval in order to produce the average channel estimate of the transmission symbol."

Applicant's amended claim 5 contains the following limitations "[a] method for detecting signals of space-time coding based on transmission diversity ... wherein the step of obtaining the channel estimates includes the steps of: filtering the pilot symbol to estimate the channel gain, and obtaining the weighted average of the channel estimates of several slots in order to produce the channel estimate of the slot; subjecting the channel estimate from said slot channel estimator to linear interpolation to produce the channel estimate of each transmission symbol; and obtaining the average of said channel estimates of the symbols for a given interval in order to produce the average channel estimate of the transmission symbol."

As asserted in the Office Action, claims 2 and 6 would be allowable if rewritten in independent form. Applicant has amended claim 1 to contain the limitations of claim 2. Applicant has amended claim 5 to contain the limitations of claim 6. Therefore, claims 1 and 5, as it now stands, are allowable for the reasons given above.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 1 and 5 are respectfully requested.

B. It is asserted in the Office Action that claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of U.S. Patent No. 6,700,926 issued to Heikkila et al, and in further view of U. S. Patent No. 5,852,630 issued to Langberg et al ("Langberg"). Applicant respectfully disagrees with the rejection for the following reasons.

Applicant's amended claim 9 contains the limitations of "[a] computer readable recording medium to perform a method of detecting the signals of transmission diversity based on space-time coding ... wherein the step of obtaining the channel estimates includes the steps of: filtering the pilot symbol to estimate the channel gain, and obtaining the weighted average of the channel estimates of several slots in order to produce the channel estimate of the slot; subjecting the channel estimate from said slot channel estimator to linear interpolation to produce the channel estimate of each transmission symbol; and obtaining the average of said channel estimates of the symbols for a given interval in order to produce the average channel estimate of the transmission symbol."

Applicant's admitted prior art discloses a conventional diversity detection system. Heikkila discloses a method for optimizing a bit-to-symbol mapping operation. Langberg discloses a DSL communication device that saves the state of component coefficients in memory for initiating a warm start.

Neither AAPA, Heikkila nor Langberg teach, disclose or suggest "wherein the step of obtaining the channel estimates includes the steps of: filtering the pilot symbol to estimate the channel gain, and obtaining the weighted average of the channel estimates of several slots in order to produce the channel estimate of the slot; subjecting the channel estimate from said slot channel estimator to linear interpolation to produce the channel estimate of each transmission symbol; and obtaining the average of said channel estimates of the symbols for a given interval in order to produce the average channel estimate of the transmission symbol."

Therefore, even if the teachings of AAPA, Heikkila and Langberg were combined, the resulting invention would still not teach, disclose or suggest the limitations contained in Applicant's amended claim 9. Therefore, there would not be any motivation to arrive at Applicants' claimed invention. Thus, Applicant's amended claim 9 is not obvious over AAPA in view of Heikkila, and further in view of Langberg since a *prima facie* case of obviousness has not been met under MPEP 2142.

Accordingly, withdrawal of the 35 U.S.C. §103 (a) rejections for claims 1 and 2 are respectfully requested.

III. Allowable Subject Matter

Claims 2-4 and 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has amended claim 1 to contain the limitations of claim 2 (claim 2 is cancelled). Applicant has amended claim 5 to contain the limitations of claim 6 (claim 6 is cancelled). Also, Applicant has amended claim 9 similarly to claims 1 and 5.

Applicant respectfully asserts that claims 1, 3-5 and 7-9, as it now stands, are allowable for the reasons given above.

CONCLUSION

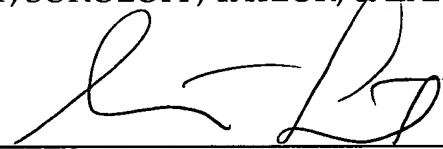
In view of the foregoing, it is believed that all claims now pending, namely 1, 3-5 and 7-9, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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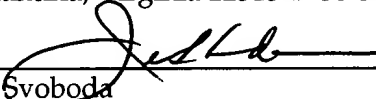
Dated: June 30, 2004

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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on June 30, 2004.


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